5. References

- A.Bernkop-Schnurch, S.Steininger (2000), Synthesis and characterisation of mucoadhesive thiolated polymers, International Journal of Pharmaceutics, 194., 239–247.
- Abdallah Makhlof, Martin Werle, Yuichi Tozuka, Hirofumi Takeuchi (2010), Nanoparticles of glycol chitosan and its thiolated derivative significantly improved the pulmonary delivery of calcitonin, International Journal of Pharmaceutics, 397., 92–95
- Alexander H. Krauland, Davide Guggi, Andreas Bernkop-Schnurch (2006), Thiolated chitosan microparticles: A vehicle for nasal peptide drug delivery, International Journal of Pharmaceutics, 307., 270–277.
- Alexander H. Krauland, Davide Guggi, Andreas Bernkop-Schnurch (2004), Oral insulin delivery: the potential of thiolated chitosan-insulin tablets on non-diabetic rats, Journal of Controlled Release, 95., 547– 555.
- Andreas Bernkop-Schnurch, Andrea Weithaler, Karin Albrecht, Alexander Greimel (2006), Thiomers: Preparation and in vitro evaluation of a mucoadhesive nanoparticulate drug delivery system, International Journal of Pharmaceutics, 317., 76–81.
- Andreas Bernkop-Schnurch, Andreas Heinrich, Alexander Greimel (2006), Development of a novel method for the preparation of submicron particles based on thiolated chitosan, European Journal of Pharmaceutics and Biopharmaceutics, 63., 166–172.
- Andreas Bernkop-Schnurch, Margit Hornof, Davide Guggi (2004), Thiolated chitosans, European Journal of Pharmaceutics and Biopharmaceutics, 57., 9–17.
- B. Naisbett, J. Woodley(1994), The potential use of tomato lectin for oral drug delivery Lectin binding to rat small intestine in vitro, Int. J. Pharm,107(3)., 223–230.
- B.S Lele, A.S HoffmanMucoadhesive(2000), drug carriers based on complexes of poly(acrylic acid) and PEGylated drugs having hydrolysable PEG–anhydride–drug linkages , J.of controlled release, 69(2)., 237-248.

- Bernkop-Schnurch, F. Gabor, M.P. Szostak, W. Lubitz(1995), An adhesive drug delivery system based on K99-fimbriae, Eur. J.Pharm. Sci, 3., 293–299.
- Bernkop-Schnurch, V. Schwarz, S. Steininger (1999), Polymers with thiol groups: a new generation of mucoadhesive polymers? Pharm. Res, 16., 876–881.
- Bravo-Osuna, D. Teutonico , S. Arpicco , C. Vauthier , G. Ponchel (2007), Characterization of chitosan thiolation and application to thiol quantification onto nanoparticle surface, International Journal of Pharmaceutics, 340., 173–181.
- BS.Andreas , H.Margit, Z.Theresa (2003), Thiolated polymers—thiomers: synthesis and in vitro evaluation of chitosan–2-iminothiolane conjugates, International Journal of Pharmaceutics, 260.,229–237.
- C.M. Lehr (1994), Bioadhesion Technologies for the delivery of peptide and protein drugs to the gastrointestinal tract, Crit. Rev. Ther. Drug, 11., 119– 160.
- Chowdary KPR, Shrinivas L (2000), Mucoadhesive Drug Delivery System: A Review of CurrentStatus, Indian Drugs, 37(9)., 400-405.
- Christian Kremser, Karin Albrecht, Melanie Greindl, Christian Wolf, Paul Debbage, Andreas Bernkop-Schnurch (2008), In vivo determination of the time and location of mucoadhesive drug delivery systems disintegration in the gastrointestinal tract, Magnetic Resonance Imaging, 26., 638–643.
- Constantia E. Kast, Andreas Bernkop-Schnurch(2001), Thiolated polymers-thiomers: development and in vitro evaluation of chitosan thioglycolic acid conjugates, Biomaterials, 22.,2345-2352.
- Constantia E. Kast, Andreas Bernkop-Schnurch(2002), Polymer–cysteamine conjugates: new mucoadhesive excipients for drug delivery?, International Journal of Pharmaceutics, 234., 91–99.
- Contantia E.Kast, Claudia valenta, Martina Leopold, Andreas Bernkop-Schnurch(2002), Design and in vitro evaluation of a novel bioadhesive vaginal drug delivery system for clotrimazole J. Controlled release, 81., 347-354.
- Davide Guggi, Andreas Bernkop-Schnurch (2005), Improved paracellular uptake by the combination of different types of permeation enhancers, International Journal of Pharmaceutics, 288., 141–150.

- Deni Rahmat, Duangkamon Sakloetsakun, Gul Shahnaz, Glen Perera, Reinhard Kaindl, Andreas Bernkop-Schnurch (2011), Design and synthesis of a novel cationic thiolated polymer, International Journal of Pharmaceutics, 411., 10–17.
- Dong-Won Lee, Shawna A Shirley, Richard F Lockey & Shyam S Mohaptra (2006), Thiolated chitosan nanoparticles enhance anti-inflammatory effects of intranasally delivered theophylline, Respiratory research, 7., 112-120.
- Dong-Won Lee, Shawna A Shirley, Richard F Lockey & Shyam S Mohaptra (2006), Thiolated chitosan nanoparticles enhance anti-inflammatory effects of intranasally delivered theophylline, Respiratory research, 7., 112-120.
- Duangkamon Sakloetsakun, Juliane M.R. Hombach, Andreas Bernkop-Schnurch (2009), In situ gelling properties of chitosan-thioglycolic acid conjugate in the presence of oxidizing agents, Biomaterials, 30., 6151–6157.
- Eytan A. Klausner, Eran Lavy, DVM, David Stepensky, Eva Cserepes, Miklos Barta, Michael Friedman, and Amnon Hoffman(2003), Furosemide Pharmacokinetics and Pharmacodynamics following Gastroretentive Dosage Form Administration to Healthy Volunteers, Journal of Clinical Pharmacology,43., 711-720.
- FG.Florian, S.Thierry, BS.Andreas (2006), In vivo evaluation of an oral delivery system for P-gp substrates based on thiolated chitosan, Biomaterials, 27., 4250–4255.
- Florian Foger, Thierry Schmitz, Andreas Bernkop-Schnurch(2006), In vivo evaluation of an oral delivery system for P-gp substrates based on thiolated chitosan, Biomaterials, 27., 4250–4255.
- FP.Thomas, H.Juliane, BS.Andreas(2008), Thiolated chitosan: Development and in vitro evaluation of an oral delivery system for acyclovir, International Journal of Pharmaceutics, 348., 54–60.
- Francesco Cilurzo, Chiara G.M. Gennari, Francesca Selmin, Joel B. Epstein, Giovanni M. Gaeta,Giuseppe Colella, Paola Minghetti (2010), A new mucoadhesive dosage form for the management of oral lichen planus: Formulation study and clinical study, European Journal of Pharmaceutics and Biopharmaceutics, 76., 437–442.

- Garg R., Gupta G.D (2008), Progress in controlled gastroretentive delivery systems, Tropical.J.Pharm Research, 3., 105-106.
- Herbert Hoyer, Wolfgang Schlocker, Kafedjiiski Krum, Andreas Bernkop-Schnurch (2008), Preparation and evaluation of microparticles from thiolated polymers via air jet milling, European Journal of Pharmaceutics and Biopharmaceutics, 69., 476–485.
- I.Bravo-Osuna, G. Millotti, C. Vauthier, G. Ponchel (2007), In vitro evaluation of calcium binding capacity of chitosan and thiolated chitosan poly(isobutyl cyanoacrylate) core–shell nanoparticles, International Journal of Pharmaceutics, 338., 284–290.
- Irene Bravo-Osuna, Christine Vauthiera, Alessandra Farabollini, Giovanni Filippo Palmieri, Gilles Ponchel (2007), Mucoadhesion mechanism of chitosan and thiolated chitosan-poly(isobutyl cyanoacrylate) core-shell nanoparticles, Biomaterials. 28., 2233–2243
- Irene Bravo-Osuna, Thierry Schmitz, Andreas Bernkop-Schnurch, Christine Vauthier, Gilles Ponchel(2006), Elaboration and characterization of thiolated chitosan-coated acrylic nanoparticles, Int.Journal of Pharmaceutics, 316., 170–175.
- J.D. Smart, I.W. Kellaway, H.E.C. Worthington(1984), An in-vitro investigation of mucosa-adhesive materials for use in controlled drug delivery, J. Pharm. Pharmacol, 36., 295– 299.
- J.J. Sahlin, N.A. Peppas, Enhanced hydrogel adhesion by polymer interdiffusion: use of linear poly (ethylene glycol) as an adhesion promoter(1997), J. Biomater. Sci., Polym, 8., 421– 436.
- Javed Iqbal, Duangkamon Sakloetsakun, Andreas Bernkop-Schnurch (2011), Thiomers: Inhibition of cytochrome P450 activity, European Journal of Pharmaceutics and Biopharmaceutics ,78., 361–365.
- Juan M. Llabot, Ruben H. Manzo, Daniel A. Allemandi (2004,) Drug release from carbomer:carbomer sodium salt matrices with potential use as mucoadhesive drug delivery system, International Journal of Pharmaceutics, 276., 59–66.

- K. P. R. Chowdary, B. Suresh, B. Sangeeta and G. Kamalakara Reddy(2003), Design And Evaluation Of Diltiazem Mucoadhesive Tablets For Oral Controlled Release, Saudi Pharmaceutical Journal, 11(4)., 201-205.
- KE.Constantia, BS.Andreas (2001), Thiolated polymers-thiomers: development and in vitro evaluation of chitosan-thioglycolic acid conjugates, Biomaterials, 22., 2345-2352.
- Krum Kafedjiiski, Alexander H. Krauland, Martin H. Hoffer, Bernkop-Schnurch(2005), Synthesis and in vitro evaluation of a novel thiolated chitosan, Biomaterials, 26., 819–826.
- Krum Kafedjiiski, Ram K.R. Jetti , Florian Foger, Herbert Hoyer, Martin Werle, Martin Hoffer, Andreas Bernkop-Schnurch (2007), Synthesis and *in vitro* evaluation of thiolated hyaluronic acid for mucoadhesive drug delivery, International Journal of Pharmaceutics, 343., 48–58.
- Lichen Yin, Jieying Ding, Chunbai He, Liming Cui, Cui Tang, Chunhua Yin (2009), Drug permeability and mucoadhesion properties of thiolated trimethyl chitosan nanoparticles in oral insulin delivery, Biomaterials, 30., 5691–5700.
- Mahesh D. Chavanpatil, Paras Jain, Sachin Chaudhari, Rajesh Shear, PradeepR.Vavia(2006),Novel sustained release, swellable and bioadhesive gastroretentive drug delivery system for ofloxacin, International Journal of Pharmaceutics, 316., 86–92.
- Mohammad Reza Saboktakin, Roya M.Tabatabaie, Abel Maharramov, Mohammad Ali Ramazanov (2010), J Pharm Educ, 1(2)., 62-67.
- Nina Langoth, Jochen Kalbe, Andreas Bernkop-Schnurc (2003), Development of buccal drug delivery systems based on a thiolated polymer, International Journal of Pharmaceutics, 252., 141–148.
- Nir Sterer, Shada Nuas, Boaz Mizrahi, Chen Goldenberg, Ervin I. Weiss, Abraham Domb, Michael Perez Davidi (2008), Oral malodor reduction by a palatal mucoadhesive tablet containing herbal formulation, Journal of dentistry, 36., 535–539.
- P.Mani, G.Shaoqin (2008), Novel thiolated carboxymethyl chitosan-g-b-cyclodextrin as mucoadhesive hydrophobic drug delivery carriers, Carbohydrate Polymers, 73.,117–125.

- R. Khosla, S.S. Davis(1987), The effect of polycarbophil on the gastric emptying of pellets, J. Pharm. Pharmacol, 39., 47– 49.
- Riley RG, Green KL, Smart JD, Tsibouklis J, Davis JA, Hampson F (2001), The gastrointestinal transit profile of 14C-labelled poly (acrylicacids): an in vivo study, Biomaterials, 22., 1861–1867.
- Santosh U. Zate, Paresh I. Kothawade, Mohan N. Rathi, Mohan H. Shitole, Chetan P. Yewale, Vinayak S. Gawande(2010), Development and characterization of gastroretentive mucoadhesive tablets of venlafaxine hydrochloride, International Journal of Drug Delivery, 2., 299-303.
- Sarah Dunnhaupt, Jan Barthelmes, Juliane Hombach, Duangkamon Sakloetsakun, Valeriya Arkhipova, Andreas Bernkop-Schnurch, (2011), International Journal of Pharmaceutics, 408., 191–199.
- Sumeet Dhaliwal, Subheet Jain, Hardevinder P. Singh, and A. K. Tiwary (2008), Mucoadhesive Microspheres for Gastroretentive Delivery of Acyclovir: In Vitro and In Vivo Evaluation, AAPS Journal, 10(2)., 322-330
- Thierry Schmitz, Irene Bravo-Osuna, Christine Vauthier, Gilles Ponchel, Brigitta Loretz, Andreas Bernkop-Schnurch (2007), Development and in vitro evaluation of a thiomer-based nanoparticulate gene delivery system, Biomaterials, 28., 524–531.
- V.M. Leitner, G.F. Walker, A. Bernkop Schnurch (2003), Thiolated polymers: evidence for the formation of disulphide bonds with mucus glycoproteins, Eur. J. Pharm. Biopharm, 56., 207– 214.
- W.J. Bologna, H.L. Levine, Ph. Cartier, D. de Ziegler(1998), Extended release buccal bioadhesive tablets WO00/1053.
- Yousefpour P, Atyabi F, Dinarvand R, Vasheghani-Farahani E (2011), Preparation and comparison of chitosan nanoparticles with different degrees of glutathione thiolation, DARU, 19(5)., 2011.
- Yunying Tao, Yifan Lu, Yinjing Sun, Bing Gu,Weiyue Lu, Jun Pan (2009), Development of mucoadhesive microspheres of acyclovir with enhanced bioavailability, International Journal of Pharmaceutics, 378., 30–36.